

Biological Hazards

As stated previously, particulate (particle filtering) respirators are now classified according to their resistance to oil mist and are further categorized based upon how effectively they can filter very small particles, including bioaerosols. Prior to the revision of the respirator certification rules, there was no approved particle respirator for protection against *Mycobacterium tuberculosis* (TB). However, because a HEPA (high-efficiency particulate air) respirator filter met all the necessary criteria for filtering out TB droplet nuclei, which have a particle diameter size between 1 and 5 microns, they were considered to be appropriate for occupational protection against TB.

With the development of bioaerosol testing procedures as part of the new respirator certification rules, NIOSH and CDC (the Centers for Disease Control and Prevention) have determined that an N95 particulate respirator is the *minimum level of respiratory protection* that is effective against occupational exposure to TB. In accordance with the enforcement policy regarding occupational exposure to TB,⁸ respirators must be provided to and worn by employees working in five identified occupational settings under any of the following circumstances: when entering rooms housing individuals with suspected or confirmed infectious TB; when present during the performance of high hazard procedures on individuals who have suspected or confirmed infectious TB; and when emergency medical response personnel or others transport, in a closed vehicle, an individual with suspected or confirmed infectious TB.

More recently, the emergence of the 2009 H1N1 influenza virus in pandemic proportions has prompted NIOSH and the CDC to evaluate the effectiveness of surgical masks compared to N95 respirators for health care workers who are treating patients with suspected or confirmed H1N1 disease. As a result, the CDC recommended that fit-tested N95 respirators is the minimum level of respiratory protection be used when health care workers are engaged in aerosol-generating procedures. Accordingly, health care facilities where employees are required to wear N95 tight-fitting respirators must implement a respiratory protection program that complies with the Respiratory Protection Standard, 29 CFR 1910.134, including medical evaluation and fit testing.

8. OSHA Directive CPL 02-02-106, Enforcement Procedures and Scheduling for Occupational Exposure to Tuberculosis, Feb. 9, 1996.